

VALUE ENGINEERING CHANGE PROPOSAL  
MISSOURI DEPARTMENT OF TRANSPORTATION

Federal  
oversight

☐ Conceptual Proposal      ☒ Final Proposal      Date 5/24/11  
Contract ID 091218-401      Job No. J4I1597  
County Jackson      Original Bid Cost \$39,337,176.89  
Contractor Clarkson Construction Company      By T. F. Kellerman  
Designed By Clarkson Construction Company      Phone 816-483-8800  
VECP# 11-48 (to be completed by C.O.)      VECP ☒ or PDVECP ☐

1. Description of existing requirements and proposed change(s). Advantages/Disadvantages  
See letter dated May 24, 2011, attached hereto.

2. Estimate of reduction in construction costs. \$60,328.25

3. Prediction of any effects the proposed change(s) will have on other department costs, such as maintenance and operations.

We are not aware of an effect on other department costs due to this proposal.

4. Anticipated date for submittal of detailed change(s) of items required by Section 104.6 of the Specifications.

May 24, 2011  
(date)

5. Deadline for issuing a change order to obtain maximum cost reduction, noting the effect of contract completion time or delivery schedule.

ASAP  
(date)

(effect)

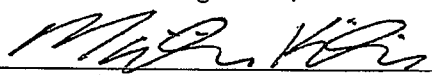
6. Dates of any previous or concurrent submission of the same proposal.

N/A  
(date and/or dates)

Additional Comments:

**\*\* Portion Below This Line To Be Filled Out by MoDOT \*\***



**Comments:** This VECP is recommended for approval based on concurrence with District Design staff, Project Manager and Geologist. The compacting embankment material will need to meet the requirements for embankment and backfill according to the contract JSP W. In addition, an estimated 1.3 acre of seeding (Line 1610) will need to be applied to the new slope. This amount (\$1,344) is not included in the VECP proposal, but will be added to the change order, and deducted from the total savings.

  
Submitted By Resident Engineer

05/25/2011  
Date

**Comments:** *BASED ON THE SUPPORTING DOCUMENTATION AND AFTER DISCUSSIONS WITH THE RE AND DESIGN REPRESENTATION, WE CONCUR WITH THIS RECOMMENDATION.*

☒ Approval  
Recommended  
  
☐ Rejection  
Recommended

District Engineer

5/31/11  
Date

**Comments:** *SEE ATTACHED CORRESPONDENCE FROM KENN IRUMB*

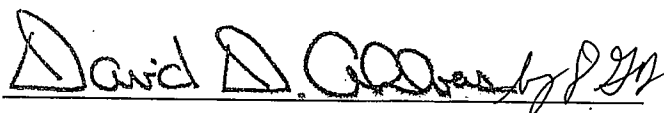
☒ Approval  
Recommended  
  
☐ Rejection  
Recommended

Federal Highway Administration  
Required for FHWA Full Oversight Projects

Date


**Comments:** *APPROVED IN ~~CONCEPT~~ CONCEPT. FINAL DESIGN WILL INCORPORATE FEATURES AGREED TO IN ATTACHED CORRESPONDENCE WITH FHWA.*

☒ Approval  
  
☐ Rejection



State Construction and Materials Engineer

8-1-11  
Date

Re: FW: Fw: VE - J4I1597, 435, Jackson - Clarkson   
Perry J Allen to: Dennis G Bryant

07/28/2011 03:06 PM

History: This message has been replied to.

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Dennis

1. We are using JSP W., "Embankment and Backfill Requirements", as our guide for acceptance of the material. This provision excludes shale from embankments higher than 20', and limits its use in embankments lower than 20'. We were planning on accepting the VE, with the understanding that no shale would be used anywhere in the new embankment. The JSP also revises maximum density compaction requirements for the embankments. The embankments shall be compacted to 95% density. The proposed source, is the excavated material from Ramp 2 (SB 435 ramp to US 40), and the excavated material from the US 40 bridge over 435, and the retaining wall on the west side. We have Standard Proctor Test results on this material, and have had success using this material as subgrade at several locations where we have added lanes.

2. We have several embankments with height over 20', and have had no issues complying with the JSP mentioned above. We could not identify an overwhelming reason why this location differs from these others. Like you mentioned, we can limit the fill height by using some rock fill but based on these other locations I can't identify a reason. We could error to the side of caution and minimize the earth fill to less than 20 feet. This may wipe the savings away as part of the VE but provide options for utilization of excess excavation. Minimally, we could install the "bleeder blanket" that Bruce mentioned, which may reduce the earth fill height as well.

Bottom line, we need to finalize this proposal so we do not stall out the project.

I will be back Monday if we need to discuss further.

Thanks

Perry J. Allen Jr. P.E.  
District Const. & Materials Engineer  
Dennis G Bryant  
----- Original Message -----

**From:** Dennis G Bryant  
**Sent:** 07/26/2011 01:38 PM CDT  
**To:** Perry Allen  
**Cc:** Kevin.Irving@dot.gov  
**Subject:** RE: FW: Fw: VE - J4I1597, 435, Jackson - Clarkson

Perry,

I'm going to need some help answering Kevin's questions below.

Thanks!

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Dennis, Good afternoon, I appreciate your respo...

07/22/2011 12:55:17 PM

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**From:** <Kevin.Irving@dot.gov>  
**To:** <Dennis.Bryant@modot.mo.gov>  
**Date:** 07/22/2011 12:55 PM  
**Subject:** RE: FW: Fw: VE - J4I1597, 435, Jackson - Clarkson

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Dennis,

Good afternoon, I appreciate your responses to my initial comments, they were very helpful. After reading through the emails from Mike and Bruce, I have a few additional questions:

1. Has the district actually field verified the source of material to determine its suitability for this type of fill as Bruce inquired earlier? Are test results available that show this material to be suitable? As Bruce points out, the contract excludes the use of shale in fills in excess of 20' high. Since the Grandview Triangle settlement issue, the district policy has been to specify rock fill in fills higher than 20 feet. Has this policy been changed? It doesn't appear that there is the same concern for settlement here and I'm not yet clear as to why this location is any different since the material source does appear to have high contents of shale and fat clays according to Bruce.

2. One recommendation to consider is to construct the fill with a combination of rock and soil to alleviate some of the risk of excessive settlement and still comply with the 20 foot soil fill policy. Has this been considered? I'm gathering that the contractor has excess fill on site that they need to get rid of and would like to use it in this fill? I was told that they were originally going to use fill material from this job on the J4I1121B Front Street project but since their VECP on that project eliminated 37,000 CY of embankment that is no longer a disposal option for them. If a combination of soil and rock fills were used, they could still use a substantial amount of the excess material plus we would likely realize the benefit of less settlement. This might be a good compromise.

I understand and support the intent to work with the contractors on these proposals so they continue to bring new ideas to the table, however, we need to assure that there is indeed an equal or better option being proposed. In my judgment, the risk of constructing such a high fill with questionable material introduces some level of doubt as to whether this proposal is indeed equal or better. If we can assure that the fill material is of suitable quality and compaction requirements are carefully enforced, or if the combination of soil and rock fill is used as mentioned above, then I would be supportive of this VECP.

Thanks,  
Kevin

-----Original Message-----

From: Dennis.Bryant@modot.mo.gov [mailto:Dennis.Bryant@modot.mo.gov]  
Sent: Thursday, July 21, 2011 1:24 PM  
To: Irving, Kevin (FHWA)  
Subject: Re: FW: Fw: VE - J4I1597, 435, Jackson - Clarkson

Kevin,

I've had the opportunity to discuss this at length with both Perry and Mike Fritz. Mike is comfortable with the proposal (I think I copied you on his email) and in fact he is generally partial to the flatter slope even if it is built from soil rather than rock. Perry has confirmed that the proposed change can be built on existing right of way.

Unless you have strong objections I am inclined to approve the proposal. It is true that the savings will not be large and it may well be that if it is an ARRA project, we may not even be able to pass the savings along

to another project. But even with that we have a proposal that has no down side that I can see and a major contractor whom we have been trying to persuade to engage in the VE process. I'd really rather not stomp his fingers unless I have a pretty sound reason to do so.

Give me a call if we need to discuss.

Thanks!

From: <Kevin.Irving@dot.gov>  
To: <Dennis.Bryant@modot.mo.gov>  
Cc: <Kenneth.Foster@faa.dot.gov>, <perry.allen@modot.mo.gov>  
Date: 07/08/2011 11:40 AM  
Subject: FW: Fw: VE - J4I1597, 435, Jackson - Clarkson

Dennis,

I was in Matt Killion's office yesterday and we discussed this briefly. I offered him some initial comments that I will summarize below:

1. There is concern that a fill of this height will be subject to settlement problems in the future if constructed with available fill material. As was indicated by Jeff Hardy and Bruce Harvel, we have had previous problems on other area deep fills in the past that have caused significant maintenance costs (Three Trails Crossing). These prompted the decision to specify rock fill in situations where the fill height exceeds 20'. Additionally, when I was out on the project, the material observed on the project contains a high amount of shale, which is one of the presumed culprits in the other problem areas. Since we are aware of this concern and we already have specified rock fill on the contract, it looks to me to that the rock fill option is the most dependable and what should be supported.

2. Given the reasons stated above, the savings of \$30k for MoDOT (which stands to be reduced due to the need for seeding/mulching which wasn't captured on the submittal) don't substantiate the risk involved with constructing an earth fill of this height when we already have the option under contract for rock fill. Also, Bruce Harvel estimated the need for 23,000 + cubic yards of fill material needed. The contractor only estimates 19,400 yards in the submittal. If Bruce is correct, that would add an additional 3-4k yards based on Clarkson's unit price, which would reduce the savings by even more.

3. Please confirm that the proposed earth fill could be constructed within R/W limits.

4. I would be interested to see any comments/recommendations from MoDOT's Central Geotech office. Have they reviewed this proposal?

5. If this project is 100% ARRA funded (need confirmation of this), as I understand, this money will not be able to be utilized on other projects, which is one of the intents of the VECP initiative.

As I mentioned to Matt, I will be on vacation next week and will not return to the office until July 19th. Hopefully, this provides you some helpful feedback for the consideration of this VECP.

Thanks,

Kevin

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From: Dennis.Bryant@modot.mo.gov [mailto:Dennis.Bryant@modot.mo.gov]  
Sent: Fri 7/8/2011 9:19 AM  
To: Perry.Allen@modot.mo.gov  
Cc: Irving, Kevin (FHWA)  
Subject: Re: Fw: VE - J4I1597, 435, Jackson - Clarkson

Perry,

Looks like I'm the guilty party on this one. I never forwarded it to FHWA for comment and it somehow slid off my radar. I'll do my best to review it with Kevin Irving as quickly as possible.

Kevin - I'll be in touch when I've had a chance to look the proposal over.

From: Perry J Allen/D4/MODOT  
To: Matthew D Killion/D4/MODOT@MODOT, Dennis G Bryant/SC/MODOT@MODOT  
Date: 07/06/2011 04:51 PM  
Subject: Fw: VE - J4I1597, 435, Jackson - Clarkson

Dennis

Please give us an update on this proposal.

Thanks

\*\*\* My office phone number has changed - Please see the new number below  
\*\*\*

Perry J. Allen Jr. P.E.  
District Construction / Materials Engineer District 4 MODOT 600 NE  
Colbern Road Lee's Summit, MO 64086  
816.607.2102

----- Forwarded by Perry J Allen/D4/MODOT on 07/06/2011 04:57 PM -----

From: Perry J Allen/D4/MODOT  
To: Dennis G Bryant/SC/MODOT@MODOT, Travis D Koestner/SC/MODOT@MODOT  
Date: 05/31/2011 11:27 AM  
Subject: VE - J4I1597, 435, Jackson - Clarkson

Dennis / Travis

Attached please find a VE proposal to eliminate rock fill along I-435

and substitute an earthen fill.

This proposal has been reviewed by both the District Geologist and District Design. Both groups have found the proposed change acceptable.

Considering this is a Federal Oversight project, we will need to have concurrence from FHWA. Your assistance with that step is greatly appreciated.

If you require additional information, please let me know.

Thanks

(See attached file: Clarkson VE 2011-1.pdf)

\*\*\* My office phone number has changed - Please see the new number below  
\*\*\*

Perry J. Allen Jr. P.E.  
District Construction / Materials Engineer District 4 MoDOT 600 NE  
Colbern Road Lee's Summit, MO 64086  
816.607.2102

(See attached file: Clarkson VE 2011-1.pdf)

# VALUE ENGINEERING CHECK SHEET

## TYPE OF WORK

(Check one that applies)

- ☐ Bridge/Structure/Footings
- ☐ Drainage Structures (RCP, RCB, CMP's, ect.)
- ☐ TCP/MOT
- ☐ Paving (PCCP, ect.)
- ☒ Grading/MSE Walls
- ☐ Signal/Lighting/ITS
- ☐ Misc. \_\_\_\_\_

## SUMMARY OF PROPOSAL

(If needed, condense summary to a couple of lines)

\_\_\_\_\_ Build conventional earth embankment with a more shallow slope in lieu of planned rock fill.

## SCANNING OF DOCUMENT

If the proposal is large, please mark or make note, which pages need to be scanned into the database. If there are special instructions, make note of them here.

\_\_\_\_\_ See post-it note indicating which pages to scan.